

FRASER VALLEY DYKES.

The Great Area They Make Safe for the
Operations of the Farmer.

How Government Aid Has Made a Success
Where Private Effort Failed.

The problem of converting the 100,000 acres odd in the Fraser valley, which are more or less influenced by overflow and the action of tidal waters, into cultivable land, has been one confronting the settlers of New Westminster district ever since settlement was first effected. Perhaps in no part of Canada and certainly not in British Columbia can there be found more fertile lands than exist in this delta valley, and it would be difficult otherwise to find anywhere conditions more favorable to agricultural success. The fruitfulness of the soil under good cultivation has been remarkable and wherever the products of the Fraser valley have been exhibited they have invariably elicited admiration and surprise. It was therefore a matter of moment to the Westminster district and to the province as a whole that a system should be devised whereby these lands could be conserved to the uses of settlement and add to the wealth of the province.

Many partial efforts have been made in the past, but owing to the uncertainty of the seasons and the flooding of the Fraser river, these have been more or less a failure as a private enterprise.

After the floods of 1894 the government turned its attention to dyking matters and devised a scheme of reclamation and protection by sections including in each a certain tract of land, the dyking of which was placed in the hands of commissioners. Unfortunately for the experiment the depression which had set in became very marked, and it

was decided after a good deal of consideration that the best and cheapest method was to perform the work under the direct control of the government, and legislation was introduced and passed in 1897 and extended in 1898 which consolidated the dyking enterprises in the Fraser river valley, bringing the whole under one control and subject to a uniform charge in the matter of expenditure.

In order to indicate the progress of dyking matters in Westminster district, it will be necessary to give a review of the original condition of the lands and the various stages which have led up to the present completion of the enterprises.

ORIGINAL CONDITION OF LANDS.

The lowlands were of great agricultural and pastoral value, but were rendered valueless from overflow except as pasture during certain seasons. The lower or more frequently flooded areas being grass lands, and the higher or less frequently flooded areas being covered with brush. The soil is in places peaty, but for the most part of a rich, loamy character. All this land, its value being evident, was taken up by settlers and others early in the history of the province and has been held practically in an unimproved state and not capable of systematic cultivation until an effective system of dyking could be inaugurated. Thus for years, except in favored spots, the valley of the Fraser has lain dormant and yielding not one-hundredth part of what it was capable of under more favorable conditions.

APPROXIMATE AREAS.

The various sections which have had the attention of the government and have been included in the general dyking scheme, are as follows:

	Acres Dyked
On the Fraser—Coquitlam.....	3,280
Pitt Meadows.....	2,500
Maple Ridge.....	8,000
Matsqui.....	10,000
	Broken Dyke
Hatzic.....	3,450
Agassiz.....	2,000
	Not Dyked
Sumas.....	20,000
	Partially Dyked
Chilliwack.....	20,000
	Broken Dyke
On Mud Bay—Surrey.....	10,000
Total.....	70,830

The above areas do not include what has been accomplished by private and municipal enterprise in the way of dyking in the municipalities of Richmond and of Delta, where large sums of money have been expended and very considerable areas protected from the waters of the Fraser.

THE VARIOUS STAGES.

The Coquitlam was begun by commissioners under the Dyking Act in the year 1894. During the construction it came under government inspection and was completed in the year 1896. It suffered considerable damage in the same year by freshets. Repairs were commenced under the government in 1898.

Pitt Meadows began as a private measure in 1892. Was completely destroyed in 1894 by the freshets of that year. The enterprise came under control of commissioners elected under the Dyking Act in 1895 and the dyke was re-erected under the commissioners in 1895. During construction it came under government inspection. It suffered slight damage in 1896 and is now being put in thorough repair by the government.

Maple Ridge was begun under commissioners. Suffered considerable damage in 1894, repaired by commissioners in 1895, subsequently coming under government inspection. A serious break occurred in 1896, which was speedily stopped. In 1897 a new line of dyke along the Fraser was selected and commenced, but had to be abandoned for lack of funds. It is now under completion by the government.

Matsqui is one of the oldest and in fact the first dyking enterprise undertaken on the Fraser river of a public or semi-public character. It was originally begun many years ago by Messrs. Sword and Derby, but was found inadequate. The gates and much of the dyke were

abandoned. Subsequently new gates were put in, portions of a new line of dyke built and the old portions strengthened. These it is stated went out before they were completed. Later on a new set of gates was put in, but do not appear to have been satisfactory. One of these gates has been almost completely washed away while another is a wreck. In 1896 new gates were put in. A portion of the new dyke was built and the old dyke strengthened in certain places, the work being carried on by commissioners under government inspection. In the same year much of the old dyke broke away but the gates stood. In 1897 the commissioners made an effort to repair the damage but ultimately abandoned it. The government in the same year took the matter in hand by day work. It is far from being complete but it is hoped that the work so far as it has gone will protect the lands this year pending completion next.

Hatzic dyke was begun in the year 1892 under the Municipal Act Dyking clause as a municipal undertaking. The railway embankment was used as a dyke, its bridges filled in and a set of gates inserted in the Hatzic stream. These were washed out in 1894 and the damage has never been repaired. If the old bonds can be purchased for a reasonable sum the government will probably undertake the repair of this work.

Sumas.—No works have yet been undertaken to reclaim these lands, but extensive surveys and examinations have been made with this end in view. The undertaking has not been found practicable so far but possibly in the near future it will be again considered.

Agassiz.—Trusting to the already formed railway bank the settlers of Agassiz north of the line, put in a gate into a small stream running into the Fraser and thus completed in the year 1892 the dyking of the lands. In the year 1893 a freshet of the stream (not of the Fraser) washed the gate out and the break has never since been repaired. The government now contemplates taking this matter in hand.

Chilliwack has never been dyked, and until lately no scheme has ever been formulated. Recently the settlers petitioned the government to take the matter in hand and there are examinations being made with a view to its entire reclamation. In the meantime as a matter of urgency dams are being put in the Hope, Camp, Half-Moon and Greyell sloughs, with intervening dykes.

Surrey.—A few years back the Surrey Flats bordering on Mud Bay and lying between the Nicomekel river and the high grounds north of the flats were dyked from tidal waters, and gates inserted in

the Serpentine river flowing through the flats. The dyke has been greatly damaged and the gates almost totally wrecked. This was a municipal undertaking and the damage has not been repaired. The government contemplates taking the matter in hand and doing such works as the settlers will derive most benefit from.

FINANCIAL AND ECONOMICAL FEATURES.

The advantages to be derived from the undertaking of these works by the government wholly under its own direction and control is very great as the statement following will show. For the four systems, Maple Ridge, Coquitlam, Pitt Meadows and Matsqui, the only ones in which it is possible to institute a comparison as between the old and the new methods taken together show a saving of over \$200,000. Not only that but the annual interest payable is very much reduced, although the total cost estimated under the government scheme is somewhat greater than that estimated under the dyking commissioners. The annual interest payable under the former was about \$29,000 whereas under the government scheme it will be \$17,000, or a saving of \$12,000 per annum in interest. As already intimated, it is impossible to institute a comparison with reference to the other schemes, but similar advantages obtain to the land owners, to the district and to the province generally. With respect to the districts already referred to the following comparative statement clearly and adequately shows the saving that will be effected and the advantages of the present scheme:

wack, which are worth perhaps \$35 an acre, the lands are practically valueless, except for pasturage during the summer months, and not worth more than \$5 or \$10 per acre.

GENERAL ADVANTAGES.

Here may be pointed out some other advantages of an important character to be obtained under government supervision and control.

1.—The guarantee against the work being scamped, in other words, its substantial character. This does not imply that work performed under the commissioners is necessarily or intentionally ineffective, but they had not among themselves the necessary professional knowledge of what was required or when work was properly done, though the commissioners undoubtedly did the best in their power to achieve good results. Incidentally it may be remarked that the expenses of supervision is less than under commissioners from the fact that there is now only single management to be paid for.

2.—The removal of the commissioner, or, as he is called, the inspector, from responsibility to what might be termed his constituents or those who elect him by a majority and who could, if they pleased, put him out of office. The present system enables the superintendent to do his work fearlessly.

3.—The immediate control of funds under government when urgently needed as against the difficulty of getting money under the commissioners, for example: In 1897 Maple Ridge began pumping when the gates were closed by the freshet. The commissioners fell short of funds and could not collect from

COMMISSIONERS' SCHEME.

Name of District.	Est'd Interest Cost. on Bonds.	Annual In. S. F. Payable.	S. F. Rate.	An. S. F. pay- able.
Maple Ridge.....	\$185,364 6 per cent	\$11,121	2½	\$4,736
Coquitlam.....	115,742 6 "	6,944	1½	1,391
Pitt Meadows.....	79,938 6 "	4,796	1½	969
Matsqui.....	106,445 6 "	6,087	1½	1,330

GOVERNMENT SCHEME.

Name of District.	Est'd Interest Cost. on Bonds.	Annual In. S. F. Payable.	S. F. Rate.	An. S. F. pay- able.
Maple Ridge.....	185,364 5½ "	6,488	1½	2,780
Coquitlam.....	115,742 3½ "	4,081	1½	1,736
Pitt Meadows.....	79,938 3½ "	2,798	1½	1,199
Matsqui.....	106,445 3½ "	3,725	1½	1,596

RELATIVE VALUE OF LANDS.

It is impossible to state what the value of the lands contained in the various areas affected will be, but a careful estimate places it on an average at \$50 per acre, while in Chilliwack perhaps a little higher. At the present time with the exception of the lands in Chill-

the settlers. Had they not had aid the land would have been flooded and valuable crops lost. The government came to their rescue and saved them. The case of Coquitlam was similar. Take again the case of Chilliwack. The urgency of the dams was very great. The commissioners could not have moved

except in accordance with the act, and they would have been obliged to have filed plans, to have held a court of revision, etc., etc., with the result that the opportunity would have passed before help could have been obtained in avoid-in the freshet. The government, however, was able through the exercise of other powers, to act, and the people have obtained the benefit of this assistance. The case of Matsqui is also similar. Under the rules laid down for the commissioners, work could not have been proceeded with until after the court of revision, with the result that the land would have been flooded. The government, however, was able by the exercise of powers outside of the act to help in an emergency, and the district

has been benefited by it. Altogether the change from a system of divided responsibility and of incomplete supervision, to one of systematic control and a minimum of expenditure has been a most beneficial one and will react over and over again to the advantage of the district affected.

ESTIMATED COST.

The estimated cost of Maple Ridge, Coquitlam, Pitt Meadows and Matsqui has already been given. The other sections are as follows:

Chilliwack	\$131,000
Agassiz	10,000
Hatzic	50,000
Currey	27,000
Sumas	19,729